

WHAT IS CLAIMED IS:

1. An image pickup apparatus, comprising:

an arrangement of a plurality of pixel units each including a first photoelectric conversion unit for
5 photoelectrically converting a first light component of a light beam that has separated an exit pupil of an imaging optical system into a plurality of parts, and a second photoelectric conversion unit for photoelectrically converting a second light component
10 different from the first light component,

wherein each of the pixel units includes a sensitivity region where a first sensitivity distribution by said first photoelectric conversion unit and a second sensitivity distribution by said
15 second photoelectric conversion unit overlap.

2. An apparatus according to claim 1, wherein said plurality of pixel units includes at least two types of pixel units having different separation
20 directions of said first and second photoelectric conversion units.

3. An apparatus according to claim 1, wherein said plurality of pixel units includes at least two
25 types of pixel units having different sensitivity regions.

4. An apparatus according to claim 1, wherein the sensitivity region is formed on the basis of an F-number of the imaging optical system of a focus detection mode.

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5. An apparatus according to claim 1, wherein each of the pixel units has a common amplification element adapted to amplify and output a signal from the first photoelectric conversion unit and a signal from the second photoelectric conversion unit, a first transfer switch adapted to transfer the signal from said first photoelectric conversion unit to said common amplification element, and a second transfer switch adapted to transfer the signal from said second photoelectric conversion unit to said common amplification element.

6. An apparatus according to claim 5, further comprising a drive circuit adapted to control a first mode in which the signals from said first and second photoelectric conversion units are added by an input unit of said common amplification element and output, and a second mode in which the signals said the first and second photoelectric conversion units are independently output from said common amplification element.

7. An apparatus according to claim 1, further comprising

an A/D conversion circuit adapted to convert a signal from the image pickup element into a digital signal, and

a digital signal processing circuit adapted to process the signal from said A/D conversion circuit.

8. An image pickup apparatus comprising:

a first semiconductor region having a first conductivity type;

a second semiconductor region formed in said first semiconductor region and having a second conductivity type different from the first conductivity type;

a third semiconductor region formed in said first semiconductor region and having the second conductivity type different from the first conductivity type, wherein said second and third semiconductor regions are photoelectric conversion units formed adjacent to each

other, and

a fourth semiconductor region having the first conductivity type is formed between said second semiconductor region and said first semiconductor region, wherein said third semiconductor region is formed under an opening.

9. An apparatus according to claim 8, wherein a

common microlens is arranged over said second and third semiconductor regions.

10. An apparatus according to claim 8, further
5 comprising

an A/D conversion circuit adapted to convert a signal from said image pickup element into a digital signal, and

a digital signal processing circuit adapted to
10 process the signal from said A/D conversion circuit.

11. An image pickup apparatus comprising:

a plurality of pixel units each including a first photoelectric conversion unit for photoelectrically
15 converting a first light component of a light beam that has separated an exit pupil of an imaging optical system into a plurality of parts, and a second photoelectric conversion unit for photoelectrically converting a second light component different from the
20 first light component; and

a processing circuit adapted to execute focus adjustment on the basis of a first sensitivity distribution including a sensitivity distribution of the first photoelectric conversion unit and a second
25 sensitivity distribution including a sensitivity distribution of the second photoelectric conversion unit, the sensitivity distributions partially

12. An apparatus according to claim 11, further comprising

a digital signal processing circuit adapted to process the signal from said A/D conversion circuit.